



# **OAK RIDGE RESERVATION (Oak Ridge National Laboratory; Y-12 Plant; K-25 Site [Oak Ridge Gaseous Diffusion Plant]; and Oak Ridge Associated Universities)**

**Oak Ridge, Anderson and Roane Counties, Tennessee**

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**Office:** Oak Ridge Operations Office

**Size:** 37,000 acres (57.8 square miles)

**NPL Status:** Placed on the NPL on November 21, 1989.

**Mission:** The Oak Ridge National Laboratory (ORNL) provides extensive research and development in energy production. Activities include reactor and accelerator development and operation, production and sale of radioactive and stable isotopes, and environmental and health research.

The K-25 Site (the Oak Ridge Gaseous Diffusion Plant) was a production and development facility for uranium enrichment. Production operations at the K-25 Site ceased in 1985. The K-25 Site is now known as the East Tennessee Technology Park. Portions of the site are being cleaned up for industrial reuse under a cost sharing program with the private sector.

The Y-12 Plant's original mission was to separate the fissionable isotope of uranium-235 by the electromagnetic process. The plant today has four principal missions: to dismantle nuclear weapon components; to provide special production support to DOE programs; to support ORNL research programs; and to serve as a manufacturing, technology, and demonstration center.

(continued)

## **Progress in Reaching Interagency Agreement**

DOE, EPA Region IV, and the State of Tennessee have negotiated an IAG for the following sites included within the Oak Ridge Reservation (ORR): ORNL, Y-12 Plant, K-25 Site, Oak Ridge Associated Universities (ORAU), and the Clinch River. The IAG was effective on January 1, 1992. In accordance with the IAG, the ORR is currently integrating the requirements of corrective measures under RCRA and applicable state law with response actions under CERCLA.

## **Specific Cost Estimates and Budgetary Proposals Involved in Each Interagency Agreement**

Funds budgeted for environmental restoration under the IAG at the ORR total \$141.1 million of appropriated funds for FY99 and \$182.7 million for FY 00 according to the request in the President's Budget.

## **Progress in Conducting Remedial Investigations/ Feasibility Studies**

To address contamination on the ORR as a whole, the reservation has been partitioned into 80 OUs/Work Units consisting of source control OUs and integrator OUs (such as groundwater and surfacewater), which can be prioritized to achieve the most effective and rapid investigation and cleanup possible. OUs are redefined and work schedules are adjusted as investigations progress and new data becomes available. RI/FSs are being conducted for each OU. The OUs are further consolidated into one of five watershed units. The watershed approach assures a comprehensive examination of all contamination, as well as time and money through the elimination of redundant activities. Removal actions

**Mission (continued):**

The Oak Ridge Associated Universities (ORAU) is a private, not-for-profit association of 49 colleges and universities. It is a contractor to DOE, conducting research and education programs in the areas of energy, health, and the environment for DOE, ORAU's member institutions, and other private and government organizations.

**Overview of Environmental**

**Conditions:** The sites include waste units that are either radioactive, hazardous, mixed (both radioactive and hazardous), or non-radioactive/ non-hazardous. Examples of the concerns include radioactive underground tanks, solid waste disposal areas, liquid waste pit and trenches, hydrofracture facilities, and dense, non-aqueous phase liquid migration in fractured rock. More than 400 contaminated units exist at the reservation, and surface water and groundwater also are contaminated.

**CERCLA/RCRA Remediation  
Funding in FY 98: \$157,100,000**

and interim remedial actions are conducted, where appropriate, to address threats to human health and the environment in advance of the final remedial action selection.

The remedial action work plans, site characterization studies, RI reports, and remedial design work plans have been prepared, using EPA guidelines for CERCLA RI/FSs and RCRA Facility Investigations (RFIs) where appropriate. These documents were sent out in accordance with milestones specified in the negotiated IAG and the schedule defined in the RCRA permit. Public meetings were held during the year to advise the public of the restoration process being implemented to remediate the ORR and to address the public's concern over the relative risk associated with the offsite contamination. Work completed or under way during FY 98 included:

ORNL:

- Submitted RI/FS Study Report for Bethel Valley Watershed;
- Submitted Interim Action PP for Fuel and Flush Salt Removal from the Molten Salt Reactor Experiment (MSRE);

- ROD and Remedial Design Work Plan (RDWP) submitted and approved; and
- FS for Melton Valley Watershed submitted and approved; submitted PP.

Y-12:

- Submitted FS for Bear Creek Valley Watershed; PP approved;
- RI Report for Upper East Fork Poplar Creek watershed approved and FS submitted; and
- Remedial/FS and PP submitted for the Environmental Management Waste Management Facility; addendum to the RI/FS was submitted and approved.

East Tennessee Technology Park (ETTP):

- Site-wide RI Work Plan submitted and approved;
- RI, FS, and PP for the K-1070-A Contaminated Burial Ground submitted and approved; and
- ROD and RDWP for the K-1070-C/D G-Pit and Concrete Pad submitted and approved.

Clinch River/Offsite:

- Submitted Remedial Site Evaluation (RSE) for Lambert Quarry; and
- Submitted RSE for Happy Valley Campsite.

**Progress in Conducting Remedial Actions**

Final CERCLA remedial action will be initiated after RODs are signed. Removal and interim cleanup actions initiated or completed during FY 98 included:

ETTP - formerly K-25 Site:

- Submitted Action Memorandum and two Removal Action Work Plans for ETTP ponds;
- Submitted Removal Action report for K-1070 C/D and Mitchell Branch Plumes;
- RD/RA Report Work Plan for K-1070 C/D G-Pit and Concrete Pad submitted and approved;
- Submitted Removal Action Work Plan for Poplar Creek Facilities Decontamination & Decommissioning (D&D);
- RA Work Plan for K-1401/K-1420 Sumps approved; submitted Removal Action Report; and
- Submitted Removal Action Work Plan for Process Equipment D&D for Buildings K-29, K-31, and K-33.

ORNL:

- EE/CA and Action Memorandum for Core Hole 8 Plume Source (Tank W-1A) Removal Action submitted and approved;
- Submitted EE/CA for FFA Tanks Remediation Project (10 tanks) and WC-14 Removal Action was submitted and approved;
- RD/RA Report Work Plan for the Guniting and Associated Tanks Project (GAAT) submitted and approved;
- Removal Action Work Plan for uranium deposit removal at the MSRE Time Critical submitted and approved;
- Removal Action Work Plan, Removal Action Report for the contents removal of the Old Hydrofracture Facility (OHF) Tank Sludge submitted and approved;
- RD/RA Report Work Plan for the ORNL Main Plant Surface Impoundments submitted and approved; and
- EE/CA for the OHF Pond/Tank Remediation submitted and approved.

Y-12:

- Submitted EE/CA for Bear Creek Valley S-3 Ponds Remediation; Action Memorandum and Removal Action Work Plan were submitted and approved;
- EE/CA, Action Memorandum, and Removal Action Work Plan for Upper East Fork Poplar Creek Firing Range was submitted and approved;
- EE/CA, Action Memorandum, and Removal Action Work Plan for Basin 9822 Cleanout were submitted and approved; and
- Removal Action Report for Y-12 D&D surveillance and maintenance was submitted and approved.

ORR Offsite:

- RA Report submitted and approved.

Additional work:

ORNL:

- Submitted Implementation Plan for FFA LLW Tank Compliance;
- Submitted Structural Integrity Assessments for the Category C Tank and Lines;
- Submitted No Further Action Request for Gunite Tank W-4 for GAAT Project; and
- Submitted and approved Treatability Study from the GAAT Project.

ORR:

- Public Involvement Plan for Community Relations; and
- Remediation Effectiveness Report for ORR Integrated Water quality Program submitted and approved.

Y-12:

- Submitted RSEs for Blair Quarry, Bear Creek Floodplain (West Pine Ridge Study Area), Cesium-137 Contaminated Oak Trees, Cesium-137 Contaminated Forest Understory, Cesium-137 Forest, Cesium-137 Contaminated Forest Floor, West End Dump Site, Perimeter Road Fill Area, and the 0900 Firearms Range;
- Submitted Footprint Reduction Process Evaluations for East Fork Ridge/White Wing Study Area; Central Chestnut Ridge Study Area, west Chestnut Ridge/West Bethel Valley Study Area, and Copper Ridge Study Area. The West Pine Ridge Study Area Footprint Reduction was approved; and

- RSEs for Cesium-137, Iron-59 contaminated Animals Pens (McNew Hollow), Happy Valley Campsite, West Black Oak Ridge Study Area, contractor's Spoil Area, and Reeves Road dump site were submitted and approved.

ETTP:

- Project Completion Report for K-25 Cooling Towers Demolition was submitted and approved.

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